



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,848	12/16/2003	Joost Jeroen Ottens	081468-0307228	3182
909	7590	08/24/2004	EXAMINER	
PILLSBURY WINTHROP, LLP			NGUYEN, HUNG	
P.O. BOX 10500			ART UNIT	
MCLEAN, VA 22102			PAPER NUMBER	
			2851	

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/735,848

**Applicant(s)**

OTTENS ET AL.

**Examiner**

Hung Henry V Nguyen

**Art Unit**

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: “the plane of support 40” (see page 11, section [0042]). Correction is required.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The negative limitation of “wherein said boundary does not include a boundary wall” renders the claim indefinite because it was an attempt to claim the invention by excluding what the inventors did not invent rather distinctly and particularly pointing out what they did invent. In re Schechter, 205 F2d. 185, 98 USPO 144 (CCPA 1953). It can not be determined the metes and bounds of the claim.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 2851

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-7, 9-13 are rejected under 35 U.S.C 102(b) as being anticipated by Van Empel et al (EP 0947884).

With respect to claims 1 and 9-13, Van Empel et al discloses a lithographic apparatus comprising all of the limitations of the instant claims such as: an illumination system for providing a beam of radiation (7); an article support structure (17) constructed to support the article (a substrate 19, or can be used to support a patterning device/reticle 29) to placed onto the optical path of the beam of radiation; the article support structure having a plurality of supporting protrusions (6) and defining a support zone to provide a plane of support; and a wall/backfill gas feed (8) arranged in the support zone to provide a backfill gas that flows to a backside of the article when supported by the article support structure, the backfill gas feed structure to provide an improved thermal conduction between the article and the article support structure and the support zone being surrounded by a boundary (8) having a reduced height relative to the plane of support so that the flow of the backfill gas is allowed to exit the support zone (see figure 2).

As to claims 2 and 12, Van Empel discloses the article (19) is substantially flat and the plane of support (17) is substantially flat (see figure 1).

With respect to claims 3-5, Van Empel further teaches the wall having a reduced height relative to the plane of support (6) in order to accommodate the flow of heat transfer gas underneath the article and to provide an improved thermal conduction between the article and

Art Unit: 2851

article support structure (see figure 2) and the gap between a top of the wall and the plane of support having a height of more than 50nm (see col.5, lines 57 thru col.6, line 1).

As to claim 6-7, Van Empel teaches a vacuum pump system to eliminate backfill gas flowing from underneath the article (see col.7, lines10-16).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over unpatentable over Van Empel et al (EP 0947884) over Tamagawa et al (U.S.Pat. 5,777,838).

As to claim 8, Van Empel discloses a lithographic apparatus comprising substantially all of the limitations of the instant claim except for an electrostatic clamp for clamping the article on the article support structure. This element is well known in the art. For example, Tamagawa teaches an electrostatic clamp for holding a wafer on the wafer support structure (see figure 1). It would have been obvious to employ the electrostatic clamp onto the lithographic apparatus of Van Empel for at least the purpose of reliably holding the article at thus improving the throughput of the lithographic device.

Art Unit: 2851

***Prior Art Made of Record***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kholodenko (U.S.Pat. 6,033,478) and Kondo (U.S.Pat. 6,710,857) discloses substrate holding devices used in an exposure apparatuses and have been cited for technical background.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Henry V Nguyen whose telephone number is 571-272-2124. The examiner can normally be reached on Monday-Friday (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

hvn  
8/18/04



**HENRY HUNG NGUYEN  
PRIMARY EXAMINER**